Summary of Cancer Incidence and Mortality for Zip Code 29020 (Camden, SC)

Cancer Incidence in Zip Code 29020

The first step in the analysis of cancer data for zip code 29020 was to look at the number of new cancer cases diagnosed in the zip code and compare this to the number of cancer cases expected (see Table 1). This first step determines if there is anything unusual with cancer patterns in the area. The number of "expected" cancer cases is calculated by using South Carolina cancer rates and applying them to the population of the zip code.

Table 1 shows what types of cancer occurred in zip code 29020 from 1996-1999, and how many cancer cases were expected. Overall, there were fewer cases of cancer than expected. A total of 456 new cases of cancer were diagnosed in the zip code, while 503 cases were expected. The most common types of cancer were prostate, lung, female breast, and colorectal cancers. These four types of cancer are also the most common cancers occurring across all of South Carolina.

The analysis revealed one type of cancer **(esophageal)** where the number of new cases that occurred was significantly higher than expected. A total of 14 esophageal cancers were diagnosed while 7 were expected.

Esophageal cancer is three times more likely to occur in men than women, and risk increases as people age. African-Americans are also three times more likely than whites to develop esophageal cancer. Alcohol and tobacco use increase risk, and if a person both smokes and drinks the risk is further increased. The risk of esophageal cancer is also raised if a person suffers from Barrett's esophagus, which is continued reflux of fluid from the stomach into the lower esophagus[1].

Cancer Deaths in Zip Code 29020

To assess cancer deaths in this zip code, cancer mortality data from 1996-2000 were used. This is the most current death data available. The same process used to analyze new cancer cases was also used to analyze cancer deaths. Table 2 shows the number of cancer deaths that occurred and the number expected in the zip code. A total of 319 cancer deaths occurred in this zip code, while 314 deaths were expected. Therefore, more cancer deaths occurred than expected; however this difference was not statistically significant.

There were two types of cancer **(prostate and oral/pharyngeal)** where the number of cancer deaths that occurred was significantly higher than expected. A total of 34 prostate cancer deaths occurred while 23 were expected, and a total of 11 oral/pharyngeal cancer deaths occurred while 6 were expected.

The causes of prostate cancer are not well known, however, researchers have determined a few risk factors that increase a man's chance of developing this disease. These risk factors include increasing age, a diet high in fat, a lack of physical activity, and family history of the disease. Also, prostate cancer occurs almost 70% more often in African-Americans as it does in white American men[1].

Oral/pharyngeal cancer is strongly associated with a person's lifestyle. Tobacco use is the main risk factor associated with oral/pharyngeal cancer. About 90% of people with oral/pharyngeal cancer use tobacco. The risk of developing these cancers increases with the amount smoked or chewed and the duration of the habit. Alcohol use also strongly increases a person’s risk of developing oral/pharyngeal cancer. People who smoke and drink have a much higher risk of cancer than those using only alcohol or tobacco alone. Other risk factors for oral/pharyngeal cancer include vitamin A deficiency, exposure to ultraviolet light, and infection with the human papillomavirus (HPV)[1].

Unfortunately, high prostate cancer and oral/pharyngeal cancer mortality rates are a trend seen across the entire state. The most recent statistics from the National Center for Health Statistics show that South Carolina ranks 3rd in the nation in prostate cancer mortality, and ranks 2nd in the nation for oral/pharyngeal cancer mortality.

Conclusions

To summarize, fewer cancer cases occurred in zip code 29020 than expected. The number of esophageal cancer cases that occurred was significantly higher than expected.

More cancer deaths occurred than expected in zip code 29020; however this difference was not statistically significant. Prostate cancer and oral/pharyngeal cancer deaths were significantly higher than expected.

In regard to your question about pancreatic cancer, the data show that more pancreatic cancer cases and deaths occurred than expected. However, these excesses were not statistically significant. Therefore, there is no evidence of a clustering of pancreatic cancer in this zip code.

In order for a true cancer cluster to exist, the number of cancers occurring must be more than would be expected by chance. Along with statistical testing, there are several other criteria that determine whether a true cancer cluster exists. First, a cancer cluster would more likely involve rarer types of cancer, such as brain cancer, rather than more common cancers, like lung or prostate cancer. Also, a cancer cluster would occur with one specific type of cancer rather than having excesses in several different types of cancer.

Taking all these criteria into consideration, there is no evidence of cancer clustering or of cancers resulting from environmental exposures in zip code 29020.

For questions about this report, please contact Laura Sanders at the SC Central Cancer Registry.

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References

1. American Cancer Society, 2001. www.cancer.org

Information on cancer incidence provided by the SC Central Cancer Registry, Office of Public Health Statistics and Information Services, SC Dept. of Health and Environmental Control.

Information on cancer mortality provided by the Division of Vital Records and the Division of Biostatistics, SC Dept. of Health and Environmental Control.

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Table 1. Analysis of New Cancer Cases in Zip Code 29020, 1996-1999

Cancer Site	Observed No. of Cases	Expected No. of Cases	Observed/Expected	Chi-SquareTest*
Lung/Bronchus	70	80.7	0.87	1.43
Colon/Rectum	68	60.8	1.12	0.84
Breast (Female)	63	73.8	0.85	1.58
Prostate	62	81.5	0.76	4.69
Non-Hodgkin's Lymphoma	19	16.4	1.16	0.43
Oral/Pharynx	17	13.8	1.23	0.73
Melanoma	16	15.5	1.03	0.02
Pancreas	15	12.1	1.24	0.71
Esophagus	**14**	**6.8**	**2.06**	**7.59**
Bladder	12	21.1	0.57	3.90
Uterus	10	12.4	0.80	0.47
Cervix	9	6.1	1.47	1.36
Leukemia	8	9.7	0.82	0.31
Kidney/Renal Pelvis	6	12.4	0.48	3.30
Brain/CNS	5	6.2	0.80	0.25
Multiple Myeloma	5	5.9	0.85	0.14
Ovary	4	8.3	0.48	2.22
Larynx	3	6.0	0.50	1.48
Stomach	2	8.4	0.24	4.90
All Sites	456	502.7	0.91	4.34

Excludes in situ cases of cancer to allow for comparison.

Excludes cancer sites with less than 5 cases of cancer expected due to the unreliability of statistical tests based on small numbers.

*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of cases is significantly different from the expected number of cases.

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Table 2. Analysis of Cancer Deaths in Zip Code 29020, 1996-2000

Cancer Site	Observed No. of Deaths	Expected No. of Deaths	Observed/Expected	Chi-SquareTest*
Lung/Bronchus	76	89.8	0.85	2.13
Colon/Rectum	34	32.0	1.06	0.13
Prostate	**34**	**23.0**	**1.48**	**5.29**
Breast (Female)	25	22.8	1.10	0.21
Pancreas	20	17.7	1.13	0.31
Non-Hodgkin's Lympohoma	13	11.5	1.13	0.20
Esophagus	12	7.2	1.66	3.13
Oral/Pharynx	**11**	**5.7**	**1.94**	**4.97**
Leukemia	10	11.3	0.89	0.15
Liver	8	5.9	1.35	0.71
Multiple Myeloma	7	7.4	0.94	0.03
Ovary	6	7.4	0.81	0.27
Brain/CNS	5	7.2	0.70	0.66
Kidney/Renal Pelvis	5	6.3	0.79	0.27
Bladder	4	6.4	0.62	0.90
Stomach	4	8.0	0.50	2.04
All Sites	319	313.7	1.02	0.09

Excludes cancer sites with less than 5 cancer deaths expected due to the unreliability of statistical tests based on small numbers.
*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of deaths is signficantly different from the expected number of deaths.
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